

## CONTENTS OF VOLUME 31 (1989/90)

### *Numbers 1, 2 (Special Issue on "Stochastic Systems Modelling, Part II"), February 1989*

Foreword, <i>R. Riganti (Italy)</i>	1
Stochastic partial differential equations in continuum physics – On the foundations of the stochastic interpolation method for Ito's type equations, <i>N. Bellomo and F. Flandoli (Italy)</i>	3
On stochastic modelling for discrete bilinear systems in Hilbert space, <i>C.S. Kubrusly (Brazil)</i>	19
Large-scale stochastic singularly perturbed systems, <i>G.S. Ladde and O. Sirisaengtaksin (U.S.A.)</i>	31
Asymptotic analysis of nonlinear systems with small stochastic perturbations, <i>J. Grasman (The Netherlands)</i>	41
Bifurcations in stochastic systems – models, analysis and simulation, <i>W.V. Wedig (F.R. Germany)</i>	55
On random variate generation when only moments or Fourier coefficients are known, <i>L. Devroye (Canada)</i>	71
The bivariate <i>H</i> -function distribution, <i>S.D. Kellogg and J.W. Barnes (U.S.A.)</i>	91
System representations and performance sensitivity estimates of discrete event systems, <i>X.R. Cao (U.S.A.)</i>	113
Generalized sensitivity analysis of ergodic stochastic systems, <i>J. Kreimer (Israel)</i>	123
Book Reviews, <i>W.F. Ames and C. Brezinski (U.S.A./France)</i>	137
News of IMACS	145

### *Number 3, July 1989*

A class of variable stepsize formulas for the parallel solution of ODE's, <i>O. Abou-Rabia (Canada)</i>	165
Multiple use of random numbers in discrete-event simulation, <i>T. Kämpke (Fed. Rep. Germany)</i>	171
Computation of incompressible potential flow using von Mises coordinates, <i>R.M. Barron (Canada)</i>	177
Simulation of electromagnetic systems by coupling of magnetic and electric equations, <i>F. Piriou and A. Razek (France)</i>	189
The earliest contribution to location theory? Spatio-economic equilibrium with Lamé and Clapeyron, 1829, <i>O.I. Franksen and I. Grattan-Guinness (Denmark)</i>	195
The boundary element method in cascade flow computation, <i>N.G. Zamani (Canada)</i>	221
A $C^1$ finite element collocation method for the equations of one-dimensional nonlinear thermoviscoelasticity, <i>S. Jiang (Fed. Rep. Germany)</i>	227

A new open ocean, hybrid coordinate primitive equation model, <i>M.A. Spall and A.R. Robinson (U.S.A.)</i>	241
Explicit solution of Sylvester and Lyapunov equations, <i>F. Rotella and P. Borne (France)</i>	271
Book Reviews, <i>W.F. Ames and C. Brezinski (U.S.A./France)</i>	283
News of IMACS	297
 <i>Numbers 4, 5 (Special Issue on "Expert Systems for Numerical Computing"), October 1989</i>	
Experiences with an Expert System for ODEs, <i>D. Barnett and D. Kahaner (USA)</i>	315
Towards the automatic numerical solution of partial differential equations, <i>P.K. Moore, C. Ozturan and J.E. Flaherty (USA)</i>	325
Elliptic Expert: An expert system for elliptic partial differential equations, <i>W.R. Dyksen and C.R. Gritter (USA)</i>	333
Anatomy of AGNES: An Automatic Generator of Numerical Equation Solutions, <i>A.D. Kowalski, R.L. Peskin and M.F. Russo (USA)</i>	343
Interactive/visual DEQSOL: Interactive creation, debugging, diagnosis and visualization of numerical simulation, <i>C. Konno, Y. Umetani, M. Igai and T. Ohta (Japan)</i>	353
Smalltalk - the next generation scientific computing interface?, <i>R.L. Peskin, S.S. Walther and A.M. Froncioni (USA)</i>	371
Knowledge representations for the automatic generation of numerical simulators for PDEs, <i>D. Balaban, J. Garbarini, W. Greiman and M. Durst (USA)</i>	383
Numerical knowledge-based systems, <i>B. Ford, S.J. Hague and R.M.J. Iles (UK)</i>	395
PDE software for distributed computing, <i>J.-Fr. Hake and W. Homberg (FRG)</i>	401
A critical discussion of the user interface of a PDE solver in the context of numerical expert systems, <i>W. Schönauer, A. Schreiner and J. Ecke-Schüth (FRG)</i>	409
Coupling symbolic manipulation and numerical simulation for complex engineering designs, <i>S.S. Tong (USA)</i>	419
A knowledge-based system for the determination of activity indicators for self-adaptive grid methods, <i>C.G. Macedo, Jr., J.C. Diaz and R.E. Ewing (USA)</i>	431
Knowledge-based FFT and convolution synthesis for any number of points, <i>D. King, T. Mullen, B. Rice, Ph. Topping and N. Weyland (USA)</i>	441
The guide to available mathematical software advisory system, <i>R.F. Boisvert (USA)</i>	453
The graphics advisor: A prototypical advisory expert system, <i>K.P. Berkbigler and P.A. Max (USA)</i>	465
Assisting experts in their data analysis tasks - An AI approach, <i>K.L. Hiebert-Dodd (USA)</i>	475
The use of neural networks in parallel software systems, <i>G. Fox, W. Furmanski and J. Koller (USA)</i>	485
Parallel (  ) Elpack: An expert system for parallel processing of partial differential equations, <i>E.N. Houstis, J.R. Rice and T.S. Papatheodorou (USA)</i>	497
A tool for evaluating compiler-based parallelization strategies, <i>T.S. Anand and R. Gupta (USA)</i>	509
Expert systems for inverse problems of wave propagation theory, <i>A.S. Alekseev, G.N. Erokhin and N.L. Podkolodny (USSR)</i>	517
Book Reviews, <i>W.F. Ames (USA)</i>	523
News of IMACS	527

*Number 6, February 1990*

A modified Capacitance Matrix Method to implement coastal boundaries in the Harvard Open Ocean Model, <i>R.F. Milliff</i>	541
The vector-network method for the modelling of mechanical systems, <i>M.J. Richard, R.J. Anderson and G.C. Andrews</i>	565
Evaluation of the accuracy of analytic non-linear optimal control laws, <i>F. Rotella, G. Dauphin-Tanguy and P. Borne</i>	583
Book reviews, <i>W.F. Ames and C. Brezinski</i>	593
News of IMACS	605
Author index to volume 31	623
Contents of volume 31	627